

Date: Monday, 6/12/2006 3:36:47 PM  
 User: Kim Johnston

## Process Sheet

SPLIT-1

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : 02.500 SUPPORT  
 Job Number : 27506  
 Estimate Number : 11058  
 P.O. Number : NIA Part Number : D28921  
 This Issue : 6/12/2006 S.O. No. : NIA Drawing Number : D2892 REV A  
 Prsht Rev. : NC Project Number : N/A  
 First Issue : NIA Type : PURCHASED PARTS Drawing Revision : A  
 Previous Run : NIA Material : NIA Due Date : 6/30/2006 Qty: 10 Um: Each  
 Written By :  
 Checked & Approved By :  
 Comment : Est. C02 11.26 Added P/O KJ

## Additional Product

B27506 10X

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 PG

PURCHASING



Comment: PURCHASING

Issue P/O: 1572

C206128/06

(10)

Description: D6104-003

Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104

Material release note required.

Blank size makes (2) D2891-1

2.0 D6104003

17-4 SS Roundbar 3.25"OD



Comment: Qty.: 1.0000 Each(s)/Unit Total : 10.0000 Each(s)  
 Support

QC6 BL 06-07-11

10

3.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive &amp; Inspect for Transit Damage

Ensure Material Release Note is attached

1006/1/10

(10)

4.0 MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI LATHE

Turn blank for Haas as per Folio FA082

MS 06/08/24 8

RTE

5.0 QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

MS 06/08/24 8

Date: Monday, 6/12/2006 3:36:47 PM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 02.500 SUPPORT

Job Number: 27506

Part Number: D28921

Job Number:



Seq. #: Machine Or Operation: Description :

6.0 BAND SAW BAND SAW



Comment: BAND SAW  
Machine as per Folio FA082  
Tumble & Deburr

J.G 06/08/30

7.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.G 06/08/30

8.0 QC8 SECOND CHECK



Comment: SECOND CHECK

J.M 06/08/30

9.0 POWDER COATING POWDER COATING



Comment: POWDER COATING  
Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

A.M 06-08-30

10.0 QC3 INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FC 06 08 30

11.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Identify and Stock  
Location: N/A

FC 06 08 30

12.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL  
Inspection Level 21

FC 06/08/30

Job Completion



C206/08/30



<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 27506
<b>Description:</b> Ø2.500 Support	<b>Part Number:</b> D2892-1
<b>Inspection Dwg:</b> D2892 Rev. A	<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing D2892 Rev. A/DSK077 Rev. A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
<b>Lathe Section</b>									
A	2.524	2.529		2.529	2.529	2.529	2.529		
B	3.702	3.722		3.707	3.714	3.715	3.710		
C	2.814	2.834		2.825	2.826	2.829	2.826		
D	0.718	0.738		.725	.725	.725	.725		
E	0.090	0.110		.097	.097	.097	.100		
F	2.714	2.734		2.725	2.721	2.725	2.724		
G	2.029	2.049		2.030	2.029	2.029	2.029		
H	3.214	3.234		3.224	3.222	3.221	3.223		
I	0.913	0.933		.932	.922	.923	.923		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.100	.100	.100	.100		
L									
<b>HAAS Section</b>									
AA	0.115	0.135		0.130	0.130				
AB	0.290	0.310		0.298	0.298				
AC	0.040	0.060		0.056	0.059				
AD	0.115	0.135		0.123	0.124				
AE	0.240	0.260		0.255	0.254				
AF	0.188	0.193	DT8706						
AG	0.240	0.260		0.250	0.250				
AH	1.126	1.146		1.143	1.144				
AI	0.454	0.474		0.460	0.460				
AJ	0.240	0.260		0.250	0.250				
AK	0.053	0.073		0.063	0.063				
AL	0.257	0.262	DT8683						
AM	1.663	1.683		1.683	1.683				
AN	0.053	0.073		0.063	0.063				
AO	0.022	0.042		0.032	0.032				
AP	2.779	2.789		2.782	2.782				
AQ									
AR									
<b>Accept/Reject</b>									

<b>Measured by:</b> MS/SG
<b>Date:</b> 06/08/24

<b>Audited by:</b> JML
<b>Date:</b> 06/08/24

<b>Rev</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
A	02.12.12	New Issue	KJ/RF	#

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WORK ORDER  
NO

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 27506
<b>Description:</b> Ø2.500 Support		<b>Part Number:</b> D2892-1
<b>Inspection Dwg:</b> D2892 Rev. A		<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing D2892 Rev. A/DSK077 Rev. A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				#5	#6	#7	#8		
<b>Lathe Section</b>									
A	2.524	2.529		2.528	2.528	2.529	2.529		
B	3.702	3.722		3.712	3.712	3.712	3.712		
C	2.814	2.834		2.829	2.829	2.829	2.826		
D	0.718	0.738		.725	.725	.725	.725		
E	0.090	0.110		.103	.100	.100	.100		
F	2.714	2.734		2.726	2.724	2.725	2.722		
G	2.029	2.049		2.029	2.029	2.029	2.029		
H	3.214	3.234		3.225	3.224	3.224	3.224		
I	0.913	0.933		.923	.923	.923	.923		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.100	.100	.100	.100		
L									
<b>HAAS Section</b>									
AA	0.115	0.135							
AB	0.290	0.310							
AC	0.040	0.060							
AD	0.115	0.135							
AE	0.240	0.260							
AF	0.188	0.193	DT8706						
AG	0.240	0.260							
AH	1.126	1.146							
AI	0.454	0.474							
AJ	0.240	0.260							
AK	0.053	0.073							
AL	0.257	0.262	DT8683						
AM	1.663	1.683							
AN	0.053	0.073							
AO	0.022	0.042							
AP	2.779	2.789							
AQ									
AR									
<b>Accept/Reject</b>									

Measured by:	M8/BC
Date:	06108124

Audited by:	
Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	



<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 27506
<b>Description:</b> Ø2.500 Support	<b>Part Number:</b> D2892-1
<b>Inspection Dwg:</b> D2892 Rev. A	<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing D2892 Rev. A/DSK077 Rev. A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				Part is #9	210	3	4		
<b>Lathe Section</b>									
A	2.524	2.529		2.536	2.538				
B	3.702	3.722		3.699	3.710				
C	2.814	2.834		2.825	2.765				
D	0.718	0.738		.725	.720				
E	0.090	0.110		.091/.120	.092/.105				
F	2.714	2.734		2.722	2.726				
G	2.029	2.049		2.029	2.036				
H	3.214	3.234		3.222	3.225				
I	0.913	0.933		N/A	.923				
J	0.022	0.042		.032	.032				
K	0.090	0.110		.100	.100				
L									
<b>HAAS Section</b>									
AA	0.115	0.135							
AB	0.290	0.310							
AC	0.040	0.060							
AD	0.115	0.135							
AE	0.240	0.260							
AF	0.188	0.193	DT8706						
AG	0.240	0.260							
AH	1.126	1.146							
AI	0.454	0.474							
AJ	0.240	0.260							
AK	0.053	0.073							
AL	0.257	0.262	DT8683						
AM	1.663	1.683							
AN	0.053	0.073							
AO	0.022	0.042							
AP	2.779	2.789							
AQ									
AR									
<b>Accept/Reject</b>									

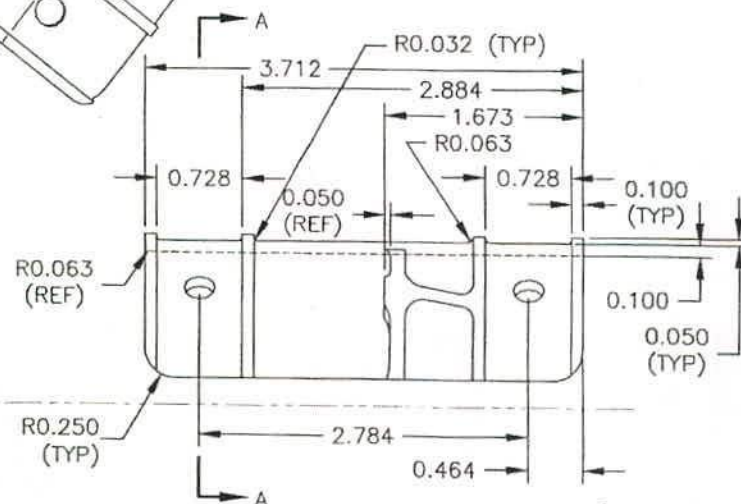
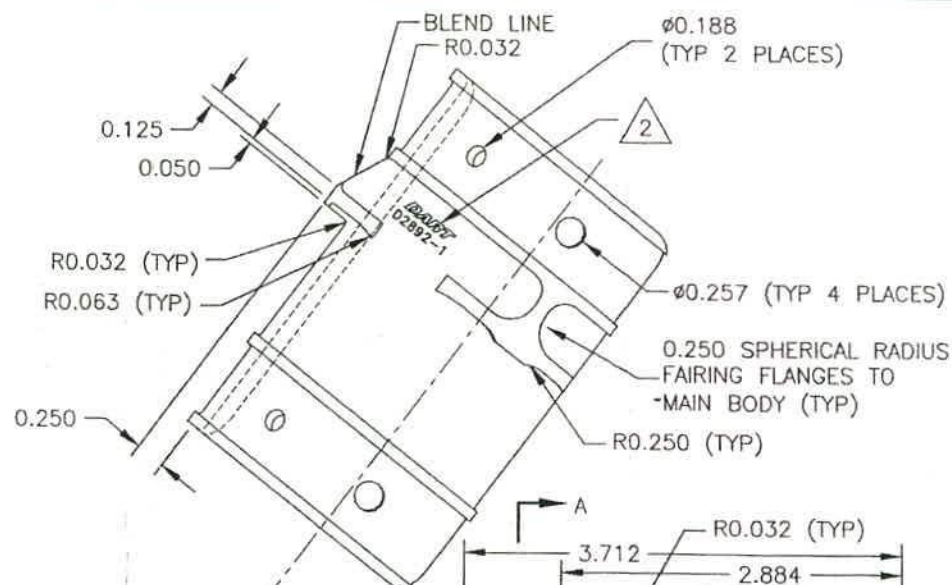
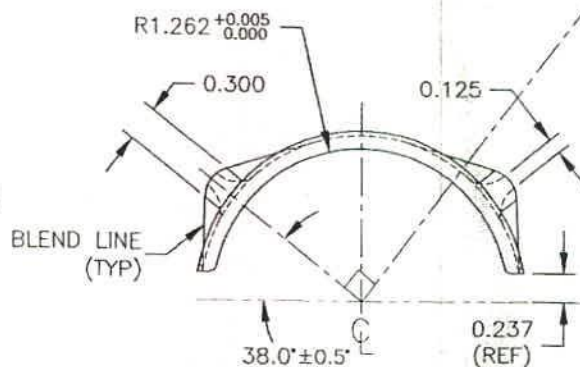
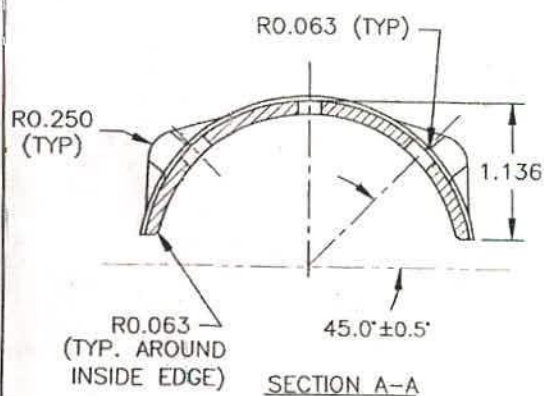
Measured by:	MS/36
Date:	06/08/25

Audited by:	
Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	✱

# D2892-1

- 1) MATERIAL: 17-4 PH STAINLESS STEEL  
HEAT TREAT TO H900 CONDITION  
(900°F FOR 1 HR, AIR COOL)  
MIN UTS = 170 KSI (38 HRC)
- 2) IDENTIFY WITH DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP
- 3) BREAK ALL UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 (REF. X.XXX =  $\pm 0.010$ ) UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES
- 7) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3



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A	00.11.17	NEW ISSUE
DESIGN	CL	DRAWN BY CL
CHECKED	#	APPROVED
DATE	00.11.17	TITLE
		Ø2.500 SUPPORT
		DART AEROSPACE LTD. WARRICK, ONTARIO, CANADA
		REV. A SHEET 1 OF 1 SCALE 1:1



# COPPER AND BRASS SALES

## MATERIAL TYPE STAINLESS STEEL

AISI SERIES  
200 300 400  
AND  
PRECIPIT HARDENING GRADES

## "WARNING"

INHALATION OF FUMES, FRESHLY GENERATED BY THE WELDING OF STAINLESS STEEL CONTAINING ONE OR MORE OF THE FOLLOWING INGREDIENTS, ZINC, MAGNESIUM OR COPPER, ARE KNOWN TO CAUSE METAL FUME FEVER. INHALATION OF DUST OR FUME FROM STAINLESS STEEL CONTAINING ONE OR MORE OF THE FOLLOWING INGREDIENTS, ALUMINUM, IRON, MANGANESE, SELENIUM, OR TIN, HAS ALSO BEEN REPORTED TO CAUSE METAL FUME FEVER AND MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT AND/OR AGGRAVATE PRE-EXISTING CONDITIONS. TARGET ORGAN IS PRIMARILY THE LUNG.

THIS PRODUCT CONTAINS CHROMIUM. EXPOSURE TO CHROMIUM DUST OR FUME MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED, IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. THIS PRODUCT MAY ALSO CONTAIN NICKEL AND COBALT. INHALATION OF NICKEL OR COBALT DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACT. NICKEL AND COBALT HAVE BEEN IDENTIFIED AS POTENTIAL HUMAN CARCINOGENS.

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE STAINLESS STEEL MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL

- \* If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use respiratory protection (P100, quantitative fit testing required) if exposures exceed the permissible limits.
- \* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.
- \* Stainless Steel, in solid form and as contained in finished products presents no special health risk.
- \* Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

The Occupational Safety and Health Administration require employers to provide training in the proper use of this product.

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ [www.copperandbrass.com](http://www.copperandbrass.com).

**VALBRUNA**

SLATER STAINLESS, INC.  
2400 Taylor Street West, P.O. Box 630  
Fort Wayne, Indiana USA 46801  
Phone: 260-434-2892 Fax: 260-434-2905

**Product Certification Report**Report Number: **4044260**

Certified on Feb 14, 2005 Page 1 of 2

Order I.D. <b>0500135 028</b>		Order Date <b>1/19/05</b>		Commodity Code	
Dim 1 <b>3.2500</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat I.D. <b>414958</b>	Customer I.D. <b>002471</b>	Customer Purchase Order <b>14121</b>
Product Shape <b>Rounds</b>			Product Surface <b>HR &amp; Rough Turned</b>		Customer Grade <b>630</b>
Length (Inches) <b>132.000 Min. 156.000 Max.</b>			Bill of Lading # <b>400811</b>	Weight	

**Ship To**  
FIRST METALS, INC.  
4747 OATES ROAD  
HOUSTON, TX 77013

**Sold To**  
VALBRUNA STAINLESS, INC.  
4747 OATES ROAD  
HOUSTON, TX. 77013

Lifts: 0042

API 6A

FMI630 9.15.03

ASTMA 564-02a GR 630

AISI 17400

FMIGB 9.15.03

ASTM A484-00

UNS S17400

AMS 5643Q

ASMESA-564-02

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.04	.62	.018	.022	.46	15.62	4.68	.15	3.31	.04	.30	.001	.30

HB

344

**TENSILE PROPERTIES  
CAPABILITY**

HB	TS (PSI)	.2%YS (PSI)	%EL(2")	%RA	AGE(F)
419	207000	190300	15.0	48.0	900

**MAGNETIC PARTICLE TEST**

FREQ SEV

AVG .00 .00

**PRODUCTION HEAT TREATMENT**

SOL-ANN(F)	SOL-ANN(HR)	QUENCH
1900	6.00	Air

**MACRO ASTM E340/E381**

MACRO

OK

OK

OK

**PERCENT FERRITE**

% FERRITE

AVG 1.5

No mercury or low melting alloy contamination. No weld repair.

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

Ultrasonic test OK.

We certify that the contents of this report are correct and that all operations performed by our company or subcontractors are in compliance with material specifications and the ASME Boiler & Pressure Code, Section III, Section III, Subsection NCA-3800, 2001 edition. 02 Addenda

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

  
Dennis Hackett



**VALBRUNA**

SLATER STAINLESS, INC.  
2400 Taylor Street-West, P.O. Box 630  
Fort Wayne, Indiana USA 46801  
Phone: 260-434-2892 Fax: 260-434-2905

**Product Certification Report**Report Number: **4044260**

Certified on Feb 14, 2005 Page 2 of 2

Order I.D. <b>0500135 028</b>		Order Date <b>1/19/05</b>		Commodity Code		
Dim 1 <b>3.2500</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat I.D. <b>414958</b>	Customer I.D. <b>002471</b>	Customer Purchase Order <b>PO# CE2857</b>	
Product Shape <b>Rounds</b>			Product Surface <b>HR &amp; Rough Turned</b>		Customer Grade <b>630</b>	
Length (Inches) <b>132.000 Min. 156.000 Max.</b>			Bill of Lading # <b>400811</b>	Weight		

**Ship  
To**

**FIRST METALS, INC.**  
**4747 OATES ROAD**  
**HOUSTON, TX 77013**

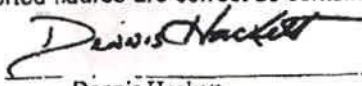
**Sold  
To**

**VALBRUNA STAINLESS, INC.**  
**4747 OATES ROAD**  
**HOUSTON, TX. 77013**

Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.  
Material melted in Italy, manufactured in the United States.  
Material conforms to listed specifications.  
Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1B.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.  
I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

  
Dennis Hackett